

NC Innovation Center Report



Report to the Joint Legislative Oversight Committee on Information Technology

Chris Estes

State Chief Information Officer

Office of Information Technology Services

December 2014



This page left blank intentionally



Contents

Introduction	1
Accomplishments & Ongoing Activities.....	1
Digital Commons.....	1
Endpoint Computing Form Factor Testing.....	2
Mobile Field Applications	2
Workspace Design	2
Beacon Technology.....	2
Business Link North Carolina Express	3
Immersive Virtual Collaboration.....	3
Self-Service Solutions.....	3
Visual Experience Lab	3
Global Load Balancing.....	3
User Virtualization	4
Platform-as-a-Service (PaaS)	4
Social Listening & Engagement.....	4
Policy Considerations.....	4
Resources.....	5
Appendix.....	6



This page left blank intentionally



Introduction

In 2013, the General Assembly endorsed the creation of a State Information Technology Innovation Center (iCenter) “to develop and demonstrate technology solutions with potential benefit to the State and its citizens.” The complete text of the legislation can be found in the appendix. The legislation requested quarterly reports about initiatives being developed and the resources used to support the center. This report provides an update on those initiatives for the first and second quarters of the 2014-2015 fiscal year, and a high-level summary of planned activities and policy.

Accomplishments & On-going Activities

Digital Commons

To provide a high-quality user experience and consistency in design and navigation of agency websites, the Innovation Center (iCenter) in collaboration with the OITS Digital team and the Cabinet agencies, initiated the Digital Commons project in late 2013. Based on requirements gathered across the agencies and work teams, an RFP was issued in May 2014. In July 2014, a contract was signed with a vendor to assist in design, user experience, information architecture, and content strategy of cabinet agency primary websites. In October 2014, a second contract was signed with another vendor to assist in developing and deploying the primary agency websites through an enterprise Content Management System (CMS) that enables non-technical resources the ability to manage site content in a user-friendly and efficient manner. Both vendors (AtlanticBT and Phase2) are engaged with the project team and are making good progress against the project plan.

The new websites will enable a similar user experience across desktops and mobile devices. This project will provide each Cabinet agencies with a complete redesign of its primary website, eliminating any costs associated with specific agencies individually pursuing these efforts. The project will also consolidate the majority of websites to the same enterprise CMS and underlying platform, providing for standardization and leveraging similar resources and skillsets.

Participating agencies include:

- Department of Health and Human Services (DHHS)
- Department of Transportation (DOT)
- Department of Cultural Resources (DCR)
- Department of Environment and Natural Resources (DENR)
- Department of Administration (DOA)
- Department of Public Safety (DPS)
- Department of Commerce
- Office of State Human Resources (OSHR)
- Office of State Budget Management (OSBM)
- Governor's Office
- Office of Information Technology Services (OITS)



To align with standardization and leverage resources, DENR and DCR will also migrate from their current CMS to the enterprise CMS. DENR, DOA, DCR, DHHS, DPS, OSBM, OSHR, OITS, NC.gov and the Governor's Office will all utilize the enterprise CMS and underlying platform. DOT, Commerce and DOR will use the Digital Commons design templates and themes to provide a consistent user experience in their legacy CMS due to agency investment in their respective technology.

Endpoint Computing Form Factor Testing

The iCenter facilitates testing capabilities on a variety of mobile and endpoint computing devices consisting of smartphones, tablets, thin & zero clients and laptop computers. In addition to in-house testing, employees can check out devices and perform tests in the field to ensure that the devices meet business requirements. Evaluations include form factor testing, user interface and application compatibility testing, application performance testing and systems interoperability testing. An ongoing project, more than 1,100 device tests have been conducted at the iCenter as of this report.

Mobile Field Applications

To improve field operations, an iCenter initiative focused on the development and testing of mobile data capture applications ranging from water quality and project quality assessments to amusement park ride inspections. Subject matter experts worked with partners to create multiple, fully-functioning mobile field applications in just a few months that enabled digital versions of previously paper-based processes. These tablet and smartphone-based applications have the ability to capture multiple field data points simultaneously through the device, including GPS coordinates, camera images and video, easing manual input. Based on successful proof of concepts, several departments within the state are now interested in moving forward with sourcing mobile field applications for various business functions.

Workspace Design

Flexible workspaces and office layouts with integrated technologies that facilitate face-to-face interactions and collaboration are being demonstrated in the iCenter. Current state government workspaces are primarily cube farms and walled offices with little space specifically designed for engagement, interaction and collaboration. The iCenter flexible design promotes collaboration and impromptu interactions, fosters creativity and innovation, provides flexibility and agility and creates a variety of work settings. It is a glimpse of the government office of the future.

Beacon Technology

Beacon technology (not to be confused with the state's Human Resources system) is a customer engagement technology that provides information sharing and user experience customization through the use of wireless beacons that can be placed in any location. Each beacon has a unique identifier that properly equipped smartphones and tablets use to receive contextual information when they are in range of a specific beacon. The State's museums, aquariums, historic sites and zoo are testing the technology to provide dynamic and interactive content, manage queues and enable purchases.



Business Link North Carolina Express

The process of creating a new business entity in North Carolina today is a challenging exercise for private sector constituents. Spanning multiple state agencies, local departments and licensing boards, the current process places a disjointed customer experience burden on the new business owner. To address this challenge, a student team from NC State University designed, prototyped and user tested a new, one-stop solution to improve the process and ease business and citizen interactions with state government. The Business Link North Carolina Express prototype uses plain language to explain state requirements and centralizes & automates several state requirements to enable successful business creation. The iCenter considers the Business Link NC Express a successful prototype. The North Carolina Government Data Analytics Center (GDAC) will participate in the iCenter regarding future use cases for this prototype.

Immersive Virtual Collaboration

Immersive communication technologies that replace face-to-face meetings with high-definition virtual in-person interactions provide an opportunity for improved government and citizen interactions and cost-savings for agencies. The immersive experience allows the most natural interactions possible among virtual participants, providing a similar level of human interaction as face-to-face meetings. The iCenter continues to evaluate these emerging technologies to seek the benefits of reduced travel cost and time while preserving quality personal interactions.

Self-Service Solutions

Interactive devices can provide customers with easy, self-guided access to products and services. Placing these solutions strategically in state offices and attractions provides the ability to streamline service delivery and assist more citizens in a timely fashion, thereby improving customer satisfaction and lowering costs-to-serve. Self-service kiosks can be used for ticketing at attractions, reducing queue times at service centers and providing information at welcome centers and ports. Once in place, kiosks offer the additional capability to quickly expand and deploy services and options offered to customers.

Visual Experience Lab

Student teams from NC State University prototyped a new Log into North Carolina (LINC) open data site and created interactive data visualizations of current open data sets. The project's focus was to increase the usability of the site and to enable graphical interpretations of the data. The students created user personas, a new information architecture and new site design based on the personas. With the new site design as a guide, the students developed an interactive prototype and conducted usability tests to provide insight for future open data user interface development considerations. Over the next several months, iCenter staff will work with NC State students and iCenter interns to perform additional user testing and work towards final site improvements.

Global Load Balancing

Load balancing technology aims to optimize performance, avoid overload of any single resource and improve recovery capabilities across data centers. The technology dynamically redirects users to the most available, highest performing network and data center resources for maximum application availability and optimum



customer experience. Global load balancing ensures high availability and keeps users and their applications accessible in the event of a disaster or when systems go offline. The State conducted a competitive analysis of these capabilities in the iCenter to select a product that best meets its requirements and is now in the process of implementing that solution for use between the State's Eastern and Western Data centers.

User Virtualization

Computer users invest substantial time and effort personalizing their desktop and applications with specific preferences and settings to make them as productive as possible. User virtualization moves unique user data and settings from a physical device, like a laptop, to a private cloud in a data center. This virtualization solution provides a seamless user experience across virtual, physical desktop and mobile devices. By virtualizing a user, the user's data and settings follow the user across different devices, platforms and delivery mechanisms, enabling productivity regardless of time, location or device used. An ongoing project in the iCenter is the pilot for hosted virtual desktop (HVD) to gain the benefits of user virtualization and create a foundation for bring your own device (BYOD) programs.

Platform-as-a-Service (PaaS)

Platform as a Service (PaaS) is an application development and hosting platform that automates the provisioning, management and scaling of applications. PaaS provides on-demand, automated technologies that standardize and streamline developer workflows to improve productivity, increase efficiency and expand hardware utilization. The service is designed to provide technical resources the ability to create, test, deploy and maintain applications without the challenges of maintaining the underlying hardware and software infrastructure on which the applications are built and reside. The state is evaluating PaaS opportunities in support of the Digital Commons program previously described.

Social Listening & Engagement

Social media has become an expected interaction tool in today's technology world. Social listening tools provide the ability to quickly and efficiently track, monitor, and react to comments, questions and complaints as they happen. This technology helps decrease customer response times and strengthens customer confidence by demonstrating the ability to quickly address and resolve issues. Social media posts can be routed to anyone across the enterprise for insight and follow-up. By tapping into millions of sources from Twitter, Facebook, LinkedIn, YouTube, blogs and more, users have a more complete picture of what's being discussed in social networks and can respond strategically and efficiently. The iCenter is moving forward with a pilot that will test social listening capabilities. If the pilot proves successful in decreasing customer response time while improving customer service, agencies interested in pursuing the solution will move towards sourcing these types of technologies.

Policy Considerations



Vendor Participation

The State's procurement process is, and will continue to be, followed to ensure a competitive bid process for all technology purchased by the State. All technology demonstrated at the iCenter is for testing and evaluation purposes only, and does not provide any vendor with preferred status or an expectation of a future business relationship. This approach has been and will continue to be made clear to the private sector participants in any interaction related to the iCenter. In addition to iCenter leadership, the vendor liaison position to be filled in Strategic Sourcing will continue to stress this approach for all iCenter engagements.

Resources

The primary challenge to the viability and longevity of the iCenter is the lack of a dedicated staff and budget to initiate, set up, process and manage projects, and demonstrate technology solutions. The iCenter was established with minimal costs and no full-time dedicated resources, however, a small staff and budget are necessary to carry out the mission envisioned in the legislation. The iCenter has primarily functioned through a number of resources with full-time positions that have committed additional time outside of their primary job responsibilities to support the iCenter and its projects. The costs the iCenter has incurred to date have been primarily associated with setting up and maintaining the physical space for collaboration and testing of technology (i.e. electrical circuits and outlets placed throughout the space, monitor mounts, paint, etc.). A dedicated staff and budget are necessary in order to continue the successful operation of the iCenter.



Appendix

Section 7.13, Session Law 2013-360

STATE INFORMATION TECHNOLOGY INNOVATION CENTER

SECTION 7.13. The State Chief Information Officer (CIO) may operate a State Information Technology Innovation Center (Center) to develop and demonstrate technology solutions with potential benefit to the State and its citizens. The Center may facilitate the piloting of potential solutions to State technology requirements. In operating the Center, the State CIO shall ensure that all State laws, rules, and policies are followed. Vendor participation in the Center shall not be construed to (i) create any type of preferred status for vendors or (ii) abrogate the requirement that the State CIO ensure that agency and statewide requirements for information technology support (including those for the Office of the State CIO and the Office of Information Technology Services) are awarded based on a competitive process that follows information technology procurement guidelines. Beginning July 1, 2013, the State CIO shall report to the Joint Legislative Oversight Committee on Information Technology on a quarterly basis on initiatives being developed and implemented within the Center, as well as on the sources and amounts of resources used to support the Center.

